DOCUMENT RESUME

ED 357 052 TM 019 768

AUTHOR Hensley, Wayne E.
TITLE Order of Elicited Responses on a Questionnaire as a Measure of Topic Salience.
PUB DATE Nov 92
NOTE 21p.; Paper presented at the Annual Meeting of the Speech Communication Convention (Chicago, IL, October 29-November 1, 1992).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classification; *College Students; Higher Education; *Questionnaires; Student Attitudes; *Student Reaction; Test Construction; *Test Format
IDENTIFIERS *Item Position (Tests); Ranking; *Response Patterns; Salience; Topicality

ABSTRACT

Two studies among U.S. college students (n=88 and n=329) examined the relationships between the order in which responses are offered on a questionnaire and the ranked importance of those responses. Study 1 included 36 males and 52 females, and Study 2 included 127 males and 202 females. Both studies found that approximately one-third (32 percent and 31 percent, respectively) of listed attributes were ranked in the order of mention. Expanding the criteria to include adjacent categories raised the overlap to about two-thirds (64 percent and 65 percent, respectively). The findings of both studies were independent of sex. In addition, Study 2 measured topic importance/involvement among the respondents, and results indicate that it was not a factor in the trend. The factor that did influence the order of mention and ranking was the number of categories used by respondents. When more than seven categories were used, the stability of mention and rankings tended to become erratic. Three tables present study findings. (Author/SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Wayne E. Hensley
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED357052

Order of Elicited Responses on a Questionnaire as a Measure of Topic Salience

Wayne E. Hensley
Virginia Polytechnic Institute and State University

Running head: RESPONSE ORDER

Competitively selected paper presented at the Speech Communication Association Convention, Chicago, October 29 - November 1, 1992.

TM019178

BEST COPY AVAILABLE

Abstract

Two studies among US college students (N_1 = 88; N_2 = 329) examined the relationships between the order in which responses are offered on a questionnaire and the ranked importance of those responses. Both studies found that approximately one-third (32%; 31%) of the listed attributes were ranked in the order of mention. Expanding the criteria to include adjacent categories raised the overlap to about two-thirds (64%; 65%). The findings of both studies were independent of sex. In addition, Study II measured topic importance/involvement among the respondents; the results indicated it was not a factor in this trend. The factor which did influence the order of mention and rankings was the number of categories used by respondents. When more than seven categories were used, the stability of mention and rankings tended to become erratic.

Order of Elicited Responses on a Questionnaire as a Measure of Topic Salience

When a person is asked the question "In your view, what are the essential qualities necessary for a person to be the President of the United States?" or "Why do you purchase Brand X?" or "What features of an automobile might prompt you to consider buying one?" most respondents are able to generate a list of words or phrases which pollsters promptly record. It is legitimate to ask, therefore, whether or not the respondent generated list contains more information than simply the responses themselves. Does the order in which the items are mentioned, carry any impact? The tentative answer to this question appears to be yes.

An early study (Adams-Webber & Benjafield, 1973) found that the more judgmentally descriptive an adjective, the more useful that adjective is in describing other persons. Building on that study, McDonagh and Adams-Webber (1987) have recently demonstrated that the order of elicitation of personal constructs is related to the importance those constructs hold for the individual. Using Kelly's (1955) Role Construct Repertory Test (rep test) their findings displayed "no overlap at all between the first 5 constructs elicited from subjects and the last 5 in

terms of their rank-order of 'importance'" (McDonagh & Adams-Webber,1987, p. 83). While this welcome study confirms what might be intuitively suspected, the data are not as conclusive as it might seem. First, the sample used by McDonagh and Adams-Webber (1987) consisted of only 11 females and 6 males. Second, Kelly's (1955) rep test is an intensely cognitive task demanding the construction of bipolar dimensions used to interpret and predict human behavior. Whether or not this type of task would generalize to issues of interest in survey research is questionable. Thus, the primary purpose of this study is to address these two central concerns.

Assuming that a favorable answer is found to the first two issues above, there is an even more interesting question: Is the stability of a list of respondent generated attributes more or less reliable depending on the length of the offered list? That is, are people who respond with only two or three attributes ordering their responses in any better sense than the respondents who use nine or ten attributes? Finally, are there systematic differences between the responses of males and females.

Method

Eighty-eight US college undergraduates (36 males and 52 females)

served as subjects in this study. All respondents were sampled in classes at a mid-Atlantic land-grant university. No one was required to participate in the study but there were no refusals.

Procedure

Subjects were asked to list "those physical attributes which make another person attractive to you." Respondents were urged not to list any extraneous attributes but, by the same token, not to omit any important ones. Next, respondents were asked to rank order the list they had just created. All subjects were then debriefed and told the purpose of the study.

The topic of physical attractiveness was deliberately selected because college aged persons are in the stage of life when dating and potential mate selection are paramount issues for them. The reasoning was that the generated list of attributes would provide a highly engaging task similar to the involvement measured by McDonagh and Adams-Webber (1987).

Results

By cross classifying the order of mention by rank it should be possible to determine the correspondence between the two. For example, an

attribute mentioned third and ranked third would be classified along the diagonal of a symmetrical table. As shown in Table 1, 155 (32%) of the evaluations fall directly on the diagonal. While this correspondence is mathematically precise, it should be recognized that extemporaneous responses may not be so numerically pure. By expanding the acceptance criteria to include adjacent categories such as "near the top," e. g., the probability that an item listed second would be ranked first, second or third and, in a similar manner, by relaxing the criteria to include "near the bottom," e. g., the probability that an item mentioned seventh would be ranked sixth, seventh, or eighth it is possible to capture the more global trends in the data. Using these more generous categories, the overlap rises to 311 mentions (64%).

Insert Table 1 about here

To deal with the question of stability, the absolute difference between each listed item and the rank of that item was summed. Understanding that a long list would be more unstable than a short one, this summated score was normed by the number of categories used by the respondent. The

derived formula was: Σ |(List n - Rank n)|/ (number of categories used). The practical implication of this formula is that the smaller the observed coefficient, the more stable the response pattern. With that understanding the results of Table 2 may be examined.

Insert Table 2 about here

The results reveal no differences between the stability coefficients of males (X =1.25; N = 36) and females (X = 1.25; N = 52). There was a substantial main effect, however, which depended on the number of categories used in describing physical attributes of attractiveness (F (8, 72; 2.48; p = .02). The interaction between sex and category number was not significant (F (6, 72) = .72; p = .64).

Table 2 indicates a clear division which appears to occur between those who offer seven or fewer categories and those who use eight or more categories. This contrast is quite significant (t = 6.61; df = 16.2; p < .001).

Discussion

These results are fairly straightforward in one sense: there is a relationship between the order in which people offer free-form responses

of attractiveness attributes and the ranked importance of those attributes. In another sense, there is less solace. There is still a substantial amount of error in spite of the generous categories such as "near the top" and "near the bottom." Fully one-third of all responses fall outside even these broad classification schemes. Even so, researchers may find utility in these results. None but the most naive believe in a perfect world and there is certainly more than random chance in these findings.

The additional analysis that seven or fewer categories provide the greatest amount of stability also comes as no surprise. The number seven is a familiar integer in the social sciences. More than a quarter century ago, Miller (1956) demonstrated that seven categories is the normative standard in information processing. The present study meshes neatly with that classic finding.

In spite of the promising nature of these findings there are some limitations which should be noted. First, it cannot be assumed that the lists provided by respondents will automatically take into account the full spectrum of salient attributes. To put the findings into perspective, no respondent listed what is perhaps the most salient physical attribute of attraction: age (Buss, 1985). Second, a general population sample might

well exhibit differing patterns from those of college students. Third, we do not know whether or not these findings can be generalized to other topic areas. Finally, the topic of physical attractiveness was deliberately selected because college-aged persons are so intensively involved in dating and potential mate selection. Thus, the responses could have easily been influenced by the high salience of the topic. A low salient topic might yield very different results.

Even with all these reservations, the results outlined here point to the fact that: (1) substantial overlap seems to exist between the order in which items are elicited and the ranked importance of those items, (2) the relationship is independent of gender, and (3) the most stable of these responses extends up to and including, but not beyond, seven freely offered categories.

Study II

The ambiguity of study I in terms of both topic area and restricted personal impact prompted a replication of these provocative findings. In a great many aspects of everyday life a person's opinions are not always focused on matters of high personal salience. This recognition extends to such arenas as national politics, consumer purchases and a host of others.

For many citizens these matters are not important but they are issues which concern survey researchers much more than personal constructs. Hence, the focus of this second study will be on an issue which is not personally important to all respondents. The question is: are those trends found in the first study replicated when an issue is of low or negligible salience? Second, but no less important, are the trends of the first study evident with a different topic area?

The topic chosen for this study was politics. As a case in point, the election between George Bush and Michael Dukakis witnessed less than one-half of the eligible electorate casting any ballot at all. Hitting a 64 year low in voter turnout, US voters stayed home in droves. This topic would seem to be ideal in finding a broad range of salience among respondents.

Method

The subjects of this study were drawn from the same university as those for study I. Among the 332 respondents, there was a single quasi-refusal. That person explained that the attributes were "all of equal importance" thereby failing to complete the task. Two other respondents had to be discarded because they made errors in the ranking process. This

left a usable response of 329 respondents: 202 females and 127 males.

Procedure

Subjects were asked, "In your view, what are the essential qualities necessary for a person to be the Governor of this state?" As before, the generated list was rank ordered afterward. In addition, subjects were given a nine-point scale which ranged from very low involvement to high involvement. Some examples are : "I don't know anything about state politics and I don't care" (1), "I know who the really important state officials are but probably couldn't name the Attorney General" (3), "I seldom if ever vote in state/local elections. They simply don't seem all that important to me" (5), "I always vote in state/local elections and I'm, keenly interested in state politics" (7), and finally "I have given money and/or time to state political causes and/or candidates"(9).

The effort in this Guttman-type scale was to measure incremental stages from total noninvolvement to high levels of political interest and commitment. Each respondent saw the total scale shown on an overhead and placed the appropriate number between one and nine on the form provided. All subjects were then debriefed and told the purpose of the study.

Results

As a manipulation check the first order of business is to ascertain the utility of the salience scale. The scale seems to have been successful. The mean salience level is in the mid-range of the scale (X = 5.33; N = 329) with almost one-third (32%) of the respondents indicating they had never registered to vote in any election to over one-fifth (21%) saying that they always (italics in the original scale) voted in state and local elections.

The next question involves the relationships among the measured variables of sex, category numbers and salience. The only significant finding is between the number of categories used and sex ($r = -.16$; $p < .003$). A further examination reveals that females tend to use significantly more categories (X = 6.22; N = 202) than do males (X = 5.47; N = 127). On the other hand, it is now clear that the number of descriptive attributes used has almost nothing to do with how important state politics is in the lives of the respondents ($r = .09$; p is n. s.) but the sex-based finding means that separate analyses need to be undertaken for each gender.

In an analysis comparable to the one shown in Table 1, low involvement (unable to name the state Attorney General, categories 1 to 3)

females (N = 34) elicited and ranked attributes in the same order 21% of the time with the expanded elicitation and rankings coming in at 54%. For high involvement (always vote in same and local elections, categories 7 to 9) females (N = 36) the same figures were 32% and 62%. Low involvement males (N = 27) were 33% and 61% for the same comparisons with high involvement males (N = 34) showing rates of 53% and 68%.

Once more stability coefficients were calculated for each respondent in the study. This coefficient is a rather direct measure of closeness of fit between the offered list and the ranked list. The three-way analysis of variance to examine the effects of sex, numbers of categories used and importance on stability yielded a main effect only for number of categories used (F (15,305) = 18.40; $p < .001$). This result suggests that it is not sex which is causing the observed differences but the tendency of females to utilize more categories than males. Unfortunately, the interaction terms could not be examined to ascertain the validity of this assertion because of a number of zero entry cells.

There was, however, another way to attack the problem. The same variables were used in an analysis of covariance design with sex as the covariate. As a partial correction for the empty cell problem, some

adjacent response categories were collapsed into fewer cells to achieve a more balanced sample for category numbers used. The results revealed that the covariate sex was highly significant (F (1, 273) = 10.92; $p < .001$) along with the main effect of category number (F (13, 273) = 28.76; $p < .001$). The interaction between the number of categories used and importance was nonsignificant. These results strongly support the notion that the interaction between sex and category number used is very strong. Thus, the more precise answer is not that males and females respond differently in eliciting and ranking a list of political attributes but that those persons offering larger numbers of categories respond differently than those offering fewer categories. This is the same result as found in study I.

Finally, the issue of stability is once again examined. Using the collapsed typology for category numbers to facilitate examination of stability, the results appear in Table 3.

Insert Table 3 about here

While some argument might ensue over where to make the decision for inclusion or exclusion, once again the clustering of results led to the choice of those respondents using seven or fewer categories. These persons seem to be the most reliable respondents and to provide the best test of how much credence might be placed in judging elicited opinions. Moreover, we already know that they do not differ from those persons with larger numbers of categories on either sex or felt importance. In this spirit, the offered list and the ranked list overlapped in 31% of the cases, while the more expanded standards included 65% of the cases. Again, these results are amazingly similar to those of study I.

Conclusions

These two studies combined seem to point to some tentative conclusions:

1. It is possible to glean more information from survey respondents than simply a categorical list of attributes concerning some topic.
2. The correspondence between the order in which a list of attributes is offered and the importance of that list of attributes is about one-third. That is, 33% of the freely offered attributes concerning a subject are ranked in importance in

precisely the same order as they are mentioned by respondents.

3. If we are willing to be a bit more generous in our interpretations, e. g., "near the top" or "near the bottom," the correspondence between freely offered attributes and the rank in importance of those same attributes rises to about two-thirds.
4. These findings appear to hold even in such diverse areas as the desirable attributes of physical attractiveness and the qualities necessary to be the Governor of a state.
5. In addition, the findings of these studies suggest that neither the salience of the topic nor the sex of the respondent need be factors of concern for the researcher.
6. These findings are tempered by the fact that as the number of freely offered responses increases beyond seven categories, the stability of the list decreases. Thus, it is recommended that these conclusions apply most directly to those persons offering seven or fewer responses.

These studies have revealed a potentially new aspect of information in survey research and one which it is hoped will be expanded to more diverse topic areas as well as to more general population samples.

References

Adams-Webber, J., & Benjafield, J. (1973)

"The relation between lexical marking and rating extremity in interpersonal judgement." Canadian Journal of Behavioural Science 5: 234-241.

Buss, D. M. (1985)

"Human mate selection." American Scientist 73: 47-51.

Kelly, G. A. (1955)

The Psychology of Personal Constructs. New York: Norton.

Miller, G. A. (1956)

"The magic number seven, plus or minus two: Some limits on our capacity for processing information." Psychological Review 53: 81-97.

McDonagh, D., & Adams-Webber, J. (1987)

"The implicative potential of personal constructs in relation to their subjective importance and order of elicitation." Social Behavior and Personality 15: 81-86.

Table 1

Cross tabulation of order of mention by rank[a]

Order of Mention	Ranks 1	2	3	4	5	6	7	8+
1	36	22	12	12	5	1	0	0
2	18	28	20	10	8	2	2	0
3	12	17	20	14	15	4	3	1
4	12	13	14	22	12	5	1	0
5	5	4	8	14	19	11	3	1
6	3	2	8	6	4	14	5	2
7	1	2	2	1	2	5	10	0
8+	1	0	0	0	0	0	0	6

[a]This is not an ordinary cross-classification table since each respondent appears in every row and every column depending on the number of categories used.

Table 2

Stability Coefficients Classified by

Number of Categories

(Study I)

Number of Categories	Sex		Total
	Male (N)	Female (N)	
2	0.00 (2)	0.00 (0)	0.00
3	1.00 (2)	.67 (5)	.76
4	1.00 (4)	1.33 (9)	1.23
5	1.60 (7)	1.07 (15)	1.24
6	1.37 (10)	1.39 (11)	1.38
7	1.06 (7)	1.20 (5)	1.12
8	1.75 (3)	1.80 (5)	1.78
9	1.56 (1)	1.78 (1)	1.67
10	0.00 (0)	1.80 (1)	1.80

Table 3

Stability Coefficients Classified by

Number of Categories

(Study II)

Number of Categories	Stability Coefficient	N
3 or fewer	.51	29
4	1.01a	59
5	1.05a	71
6	1.51b	57
7	1.71b	51
8	1.98	32
9 or more	2.48	30

Letters denote categories which do not significantly differ from one another using the Newman-Keuls procedure